

### H.V.A.C. ABBREVIATION LEGEND

A/C	AIR CONDITIONER	REV.	REVISION	A.H.U.	AIR HANDLING UNIT
DN.	DOWN	N.T.S.	NOT TO SCALE	D.G.	DOOR DAMPER
EXH.	EXHAUST	MFOR.	MANUFACTURER	F.I.D.	FIRE DAMPER
EXT.	EXTERIOR	R/A	RETURN AIR	DISP.	DISPOSABLE
E.F.	EXHAUST FAN	GR.	GRILLE	V.C.D.	VOLUME CONTROL DAMPER
A.F.F.	ABOVE FINISH FLOOR	C.D.	CEILING DIFFUSER	F/A	FRESH AIR
F.F.	FINISH FLOOR	REG.	REGISTER	S.P.	SAFE PAN
TYP.	TYPICAL	C.U.	CONDENSING UNIT	CD.	CONDENSATE DRAIN

### SUPPLY DIFFUSER SCHEDULE

DESIGNATES LABEL FOR DIFFUSER TYPE	DESIGNATES CFM QUANTITY FOR DIFFUSER	ALL DIFFUSERS ARE TO BE PROVIDED WITH OPPOSED BLADE DAMPERS UNLESS OTHERWISE SPECIFIED ON PLANS.		
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
A	TITUS TDC-AA	6"ø	0 - 125	12X12 LOUVERED FACE
B	TITUS TDC-AA	6"ø	0 - 125	24X24 LOUVERED FACE
C	TITUS TDC-AA	8"ø	130 - 200	24X24 LOUVERED FACE
D	TITUS TDC-AA	10"ø	205 - 325	24X24 LOUVERED FACE
E	TITUS TDC-AA	12"ø	330 - 500	24X24 LOUVERED FACE
F	TITUS TDC-AA	6"ø	0 - 125	24X24 LOUVERED FACE W/RADIATION FIRE DAMPER

### RETURN GRILLE SCHEDULE

DESIGNATES LABEL FOR GRILLE TYPE	DESIGNATES CFM QUANTITY FOR GRILLE	FILTER SHALL BE PROVIDED AT UNIT.		
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	TITUS 355FL	10X10	0 - 400	
2	TITUS 355FL	12X12	400 - 600	
3	TITUS 355FL	18X18	605 - 1200	
4	TITUS 355FL	24X24	1205 - 2000	
5	TITUS 355FL	24X48	2005 - 4000	
6	TITUS 355FL	10X10	0 - 400	PROVIDE RADIATION FIRE DAMPER
7	TITUS 355FL	12X12	400 - 600	PROVIDE RADIATION FIRE DAMPER

TWO 12X12 "PENN" MODEL RAH LOUVERS (1) HIGH 12" BL. GLG. AND (1) LOW 6" A.F.F. FOR MECHANICAL ROOM COMBUSTION AIR. COMBUSTION AIR CALCS. TOTAL BTU OF ALL APPLIANCES IS 40,000 BTU. ACCORDING TO NFPA 54 SECTION 5.3.3(a) 1 SQ. IN. PER 1,000 BTU IS REQUIRED WHICH EQUALS 40 SQ. INCHES. THE 12X12 LOUVER HAS 144 SQ. INCHES W/ A 47% FREE AREA FACTOR, OR 67 SQ. INCHES OF FREE AREA AVAILABLE.

REFER TO GREASE DUCT FIRE RATING DETAIL ON SHEET M-3 FOR DETAILS.

### OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "KITCHEN" CATEGORY = 20 PEOPLE PER 1,000 SQ. FT. & 15 CFM PER PERSON.

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #1	513	513 / 1000 X 20 = 11	11 X 15 = 165/2=83

### OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "CLASSROOMS" CATEGORY = 50 PEOPLE PER 1,000 SQ. FT. & 15 CFM PER PERSON.

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #3	640	640 / 1000 X 50 = 32	32 X 15 = 480/2=240

### OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "TOILET ROOM" CATEGORY = 50 CFM PER TOILET AND OR URINAL.

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #3	-	- / 1000 X - = -	8 X 50 = 400/2=200

### OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "OFFICE" CATEGORY = 7 PEOPLE PER 1,000 SQ. FT. & 20 CFM PER PERSON.

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #3	200	200 / 1000 X 50 = 10	10 X 20 = 200/2=100

TOTAL OUTSIDE AIR FOR AHU #3 = 540

### OUTSIDE AIR CALCULATIONS

THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "OFFICE" CATEGORY = 7 PEOPLE PER 1,000 SQ. FT. & 20 CFM PER PERSON.

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #3	1,129	1,129 / 1000 X 7 = 8	8 X 20 = 160/2=80

### OUTSIDE AIR CALCULATIONS

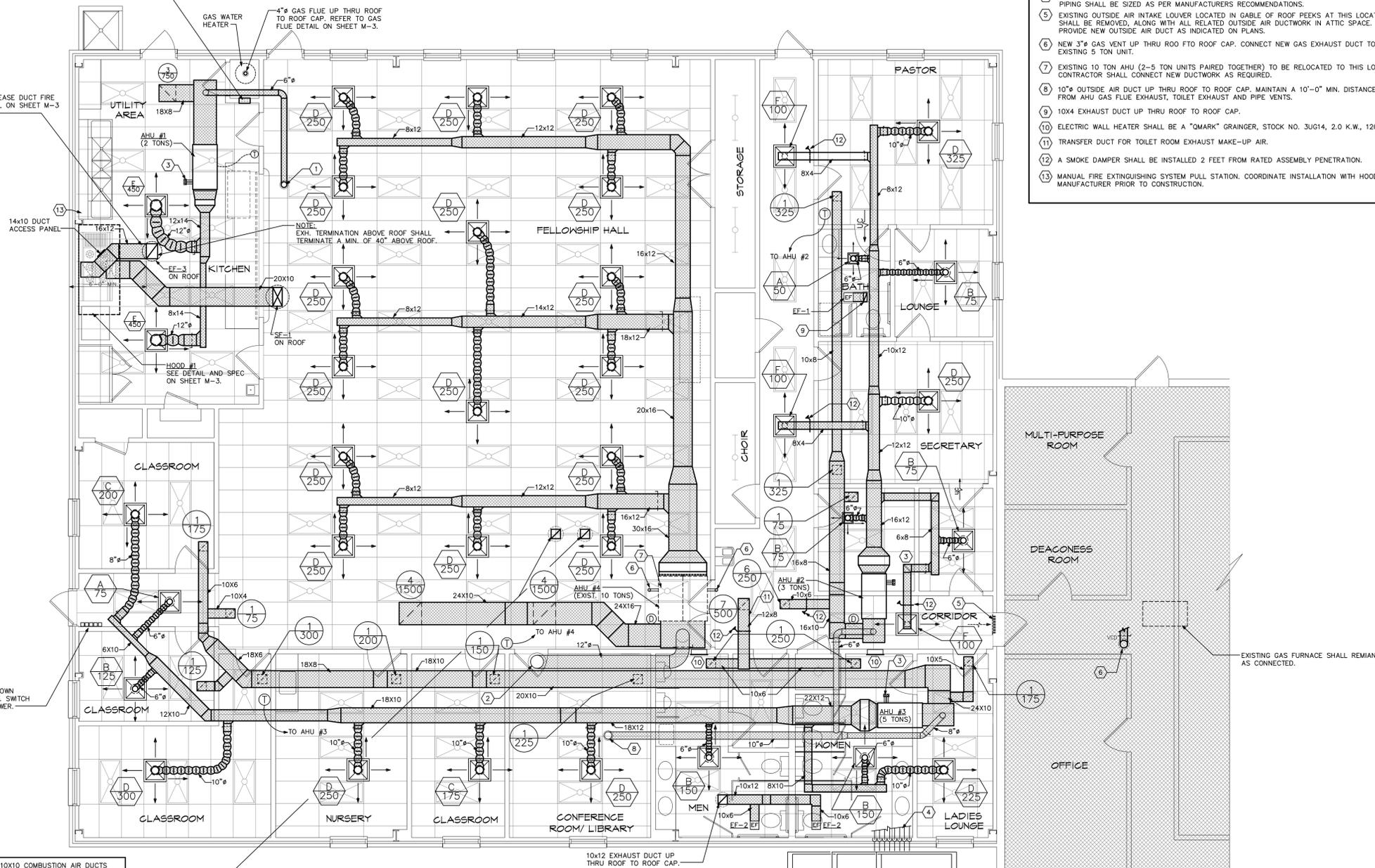
THE FOLLOWING IS BASED ON ASHRAE STANDARD 62 FOR OUTSIDE AIR REQUIREMENTS. OUTDOOR AIR REQUIREMENTS ARE BASED ON "ASSEMBLY" CATEGORY = 128 PEOPLE AS PER ARCHITECTURAL PLANS. 15 CFM PER PERSON.

UNIT LABEL	AREA SERVED (SQ. FT.)	ESTIMATED MAX. OCCUPANCY	OUTSIDE AIR REQUIRED (CFM)
AHU #4	2,100	- / 1000 X - = 128	140 X 15 = 2,100/2=1,050

\* THE OCCUPANCY OF THIS FACILITY DOES NOT EXCEED THREE HOURS AT ANY TIME, THEREFORE THE FACILITY QUALIFIES FOR REDUCTION OF OUTSIDE AIR IN ACCORDANCE WITH THE ASHRAE STANDARD 62 SECTION 6.1.3.4. THE AVERAGE OCCUPANCY IS LESS THAN 1/2 THE MAXIMUM CALCULATED OCCUPANCY, SO THE FRESH AIR PROVIDED WILL BE 1/2 THE CALCULATED IN ACCORDANCE WITH SECTION 6.1.3.4.

PROVIDE MASTER HVAC SHUT-DOWN SWITCHES FOR EACH HVAC UNIT. SWITCH TO CONTROL MAIN CONTROL POWER.

PROVIDE (2) 10X10 COMBUSTION AIR DUCTS BOTH TERMINATING ABOVE ROOF WITH ROOF CAP. (1) DUCT SHALL TERMINATE IN ATTIC 12" ABOVE UNDERSIDE OF ROOF AND (1) DUCT SHALL TERMINATE 12" ABOVE CEILING LEVEL TO ALLOW FOR PROPER COMBUSTION AIR FOR AHU #4. LOCATE DUCT TERMINATION AS CLOSE TO AHU #4 AS POSSIBLE. COMBUSTION AIR CALCS. TOTAL BTU OF ALL GAS APPLIANCES IN ATTIC IS 250,000 BTU. ACCORDING TO NFPA 54 SECTION 5.3.3(b)(1)(a) 1 SQ. IN. PER 4,000 BTU IS REQUIRED WHICH EQUALS 63 SQ. INCHES. THE 10X10 DUCT PROVIDES 100 SQ. INCHES OF FREE AREA.



## 1 FLOOR PLAN - MECHANICAL

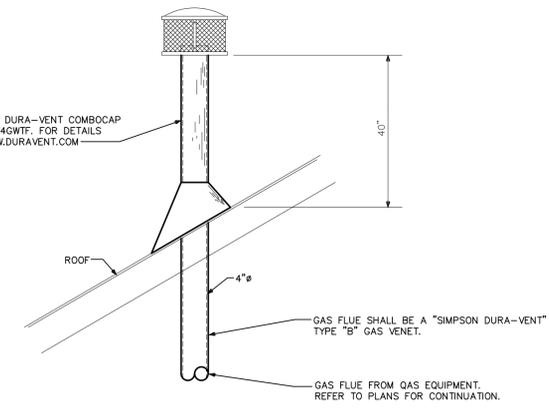
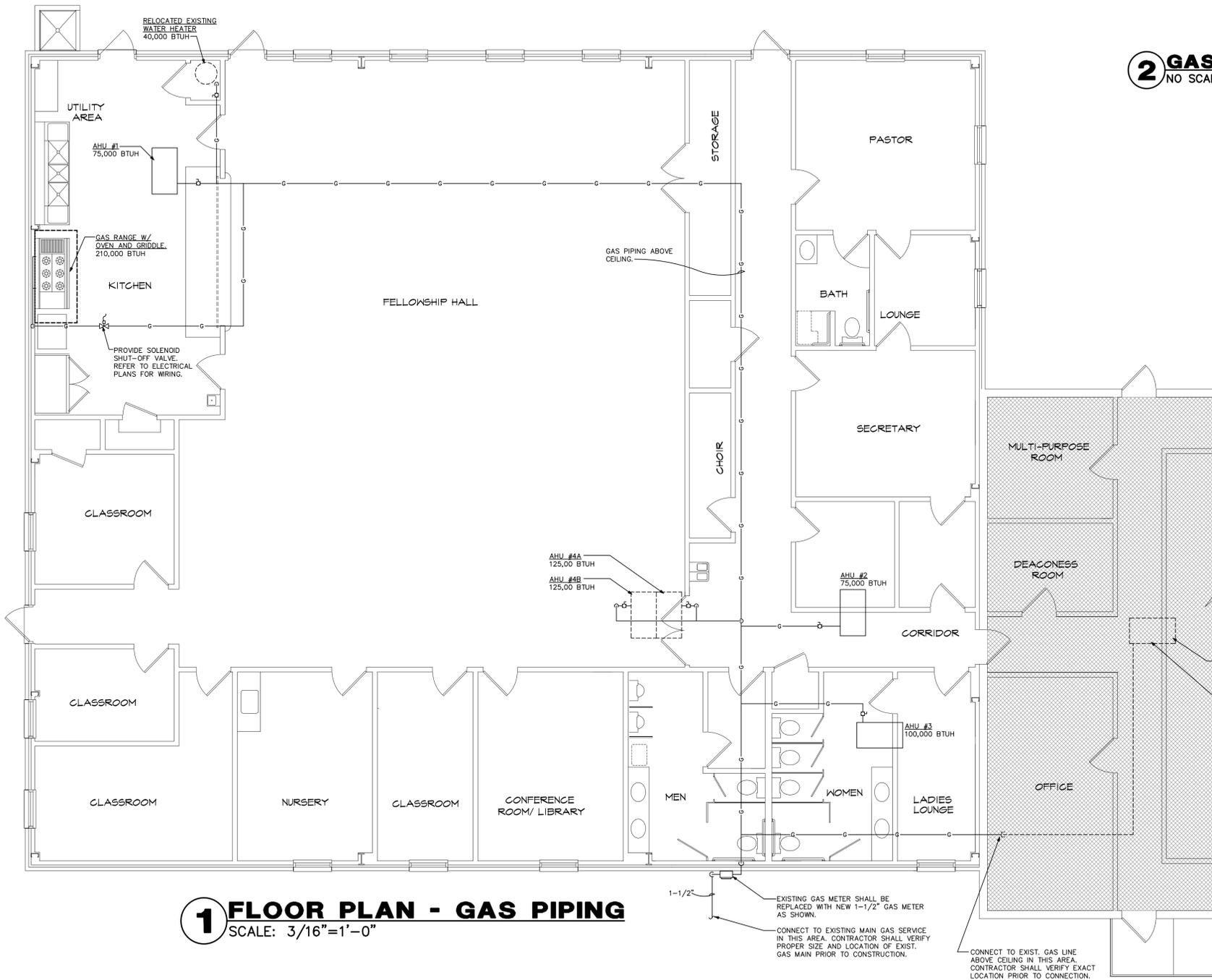
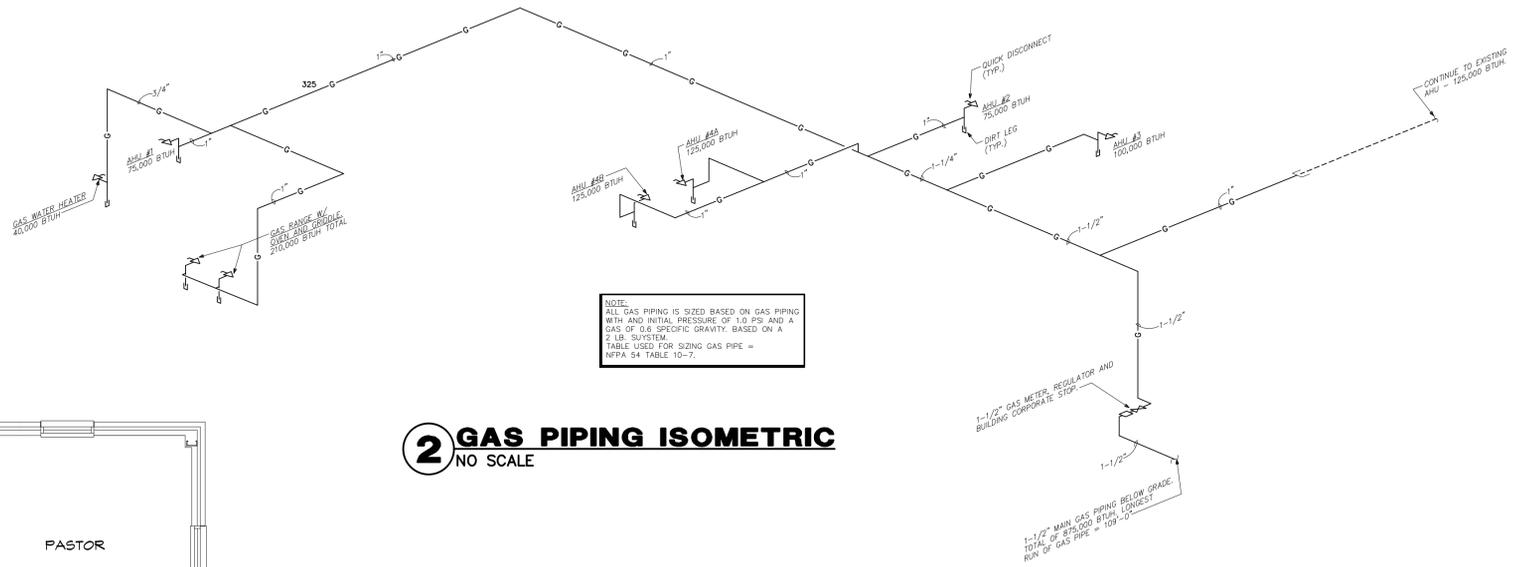
SCALE: 3/16"=1'-0"

### MECHANICAL SPECIFIC NOTES

- 6"ø OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP. MAINTAIN A 10'-0" MIN. DISTANCE FROM AHU GAS FLUE EXHAUST, TOILET EXHAUST AND PIPE VENTS.
- 14"ø OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP. MAINTAIN A 10'-0" MIN. DISTANCE FROM AHU GAS FLUE EXHAUST, TOILET EXHAUST AND PIPE VENTS.
- "LENNOX" CONCENTRIC VENT/INTAKE COMBUSTION AIR ROOF TERMINATION KIT.
- REFRIGERANT PIPING UP IN EXTERIOR WALL. OFFSET IN ATTIC TO AHU'S. ALL REFRIGERANT PIPING SHALL BE SIZED AS PER MANUFACTURERS RECOMMENDATIONS.
- EXISTING OUTSIDE AIR INTAKE LOUVER LOCATED IN GABLE OF ROOF PEELS AT THIS LOCATION SHALL BE REMOVED, ALONG WITH ALL RELATED OUTSIDE AIR DUCTWORK IN ATTIC SPACE. PROVIDE NEW OUTSIDE AIR DUCT AS INDICATED ON PLANS.
- NEW 3"ø GAS VENT UP THRU ROOF TO ROOF CAP. CONNECT NEW GAS EXHAUST DUCT TO EXISTING 5 TON UNIT.
- EXISTING 10 TON AHU (2-5 TON UNITS PAIRED TOGETHER) TO BE RELOCATED TO THIS LOCATION. CONTRACTOR SHALL CONNECT NEW DUCTWORK AS REQUIRED.
- 10"ø OUTSIDE AIR DUCT UP THRU ROOF TO ROOF CAP. MAINTAIN A 10'-0" MIN. DISTANCE FROM AHU GAS FLUE EXHAUST, TOILET EXHAUST AND PIPE VENTS.
- 10X4 EXHAUST DUCT UP THRU ROOF TO ROOF CAP.
- ELECTRIC WALL HEATER SHALL BE A "OMARK" GRAINGER, STOCK NO. 3UG14, 2.0 K.W., 120V/1Ø.
- TRANSFER DUCT FOR TOILET ROOM EXHAUST MAKE-UP AIR.
- A SMOKE DAMPER SHALL BE INSTALLED 2 FEET FROM RATED ASSEMBLY PENETRATION.
- MANUAL FIRE EXTINGUISHING SYSTEM PULL STATION. COORDINATE INSTALLATION WITH HOOD MANUFACTURER PRIOR TO CONSTRUCTION.

**GENERAL NOTES**

1. GAS PIPING AND FITTINGS SHALL BE SEAMLESS BLACK STEEL WITH MALLEABLE IRON FITTINGS. DIELECTRIC COUPLINGS OR UNIONS SHALL BE UTILIZED WHEN PIPING OF DISSIMILAR METAL IS CONNECTED. GAS PIPING OUTSIDE THE BUILDING SHALL BE PAINTED WITH BLACK "RUSTOLEUM" PAINT.
2. GAS PIPING SYSTEM SHALL BE INSTALLED TO THE REQUIREMENTS OF THE AGA PAMPHLET "INSTALLATION OF GAS APPLIANCES AND GAS PIPING" AND THE NFPA STANDARD #54. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS AND PAY ALL FEES WITH THE "LOCAL" GAS COMPANY FOR THE INSTALLATION OF THE GAS METER, GAS SERVICE, AND ITS ACCESSORIES NECESSARY FOR A COMPLETE SYSTEM.
3. GAS PIPING SHALL BE TESTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN NFPA #54, AND ANY OTHER TESTS REQUIRED BY THE LOCAL BUILDING DEPARTMENT AND/OR THE LOCAL GAS UTILITY COMPANY.
4. THE INSTALLING SUBCONTRACTOR SHALL BE LICENSED BY THE STATE FOR THE INSTALLATION OF GAS PIPING.
5. RUNOUT PIPING, FROM THE MAIN PIPING TO APPLIANCES, SHALL BE WITH AN INVERTED TRAP CONNECTION AT THE MAIN.
6. A 12" DIRT LEG, AND A GAS COCK, SHALL BE PROVIDED AT ALL GAS APPLIANCES.

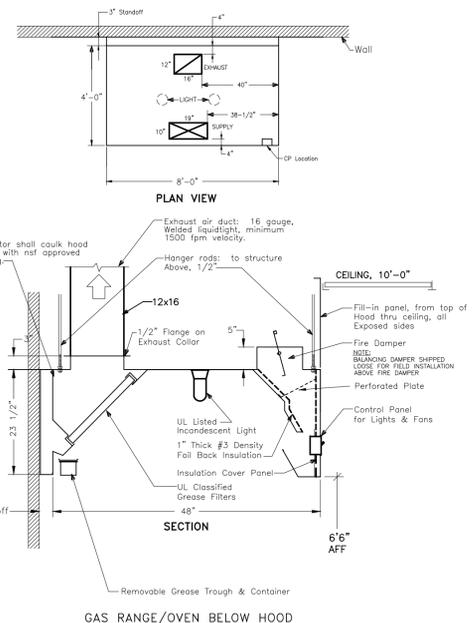
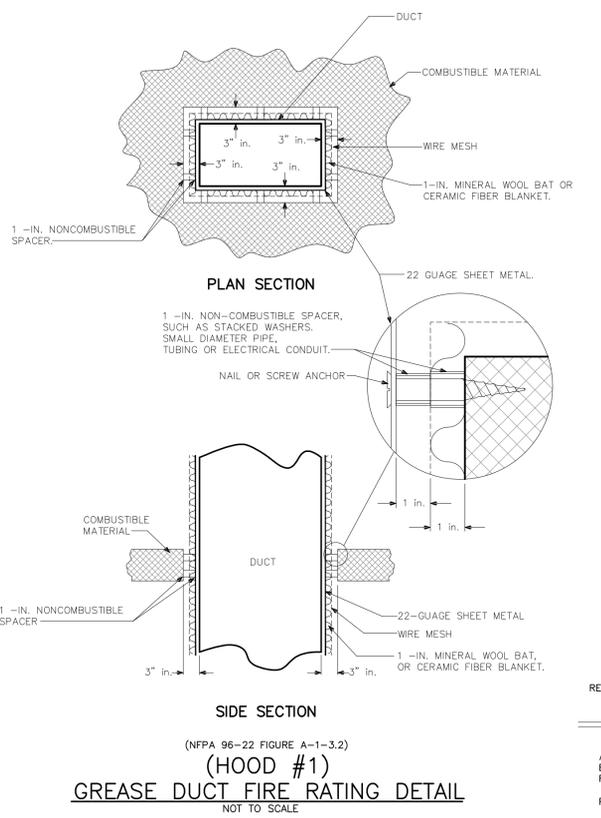


### GENERAL MECHANICAL NOTES

- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SYSTEM IN ACCORDANCE WITH THESE DRAWINGS, THE APPLICABLE BUILDING CODE AND ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND THE LATEST EDITION OF THE FOLLOWING PUBLICATIONS: SMACNA, ASHRAE, NFPA 90A, 90B, 91 & 95.1 MECHANICAL REFRIGERATION, ALL DUCTWORK SHALL BE FABRICATED, INSTALLED AND SUPPORTED AS PER SMACNA STANDARDS.
- THE CONTRACTOR SHALL PAY ALL COSTS OF PERMIT, INSPECTIONS AND ALL OTHER COSTS INCIDENTAL TO THE COMPLETION AND TESTING OF THIS WORK.
- THE CONTRACTOR SHALL VISIT THE SITE AND COORDINATE WORK WITH OTHER TRADES TO INSURE AN ORDERLY PROGRESS OF THIS WORK.
- THE CONTRACTOR SHALL SUPPLY THE ARCHITECT WITH "AS-BUILT" DRAWINGS UPON COMPLETION OF THIS PROJECT.
- CONTRACTOR SHALL SUBMIT, FOR APPROVAL FIVE (5) COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT.
- ALL MATERIAL SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
- ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL EXTERNALLY WRAPPED WITH 1" INSULATION WITH A 4.2 R VALUE OR HIGHER.
- ALL EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED SHEET METAL WITH SEALED SEAMS AND JOINTS.
- DUCT SIZES SHOWN ARE INSIDE DIMENSIONS.
- ALL AIR DEVICES (DIFFUSERS, REGISTERS AND GRILLES) SHALL BE ALL ALUMINUM CONSTRUCTION WITH EXPOSED SURFACE OFF WHITE BAKED ENAMEL FINISH OR AS SPECIFIED BY ARCHITECT. DEVICES SHALL BE TITUS, METALARE, AIRGUIDE. PROVIDE OPPOSED BLADE DAMPERS AT ALL DIFFUSERS AND REGISTERS.
- THERMOSTAT SHALL BE COMBINATION COOLING/HEATING, WITH SYSTEM "COOL-AUTO-HEAT-OFF" AND FAN "ON-AUTO" SELECTOR SWITCHES. PROVIDE PROGRAMMABLE TYPE, HONEYWELL OR EQUAL.
- REFRIGERANT LINES SHALL BE COPPER, TYPE "L" HARD DRAWN WITH WROUGHT COPPER SOLDER-JOINT TYPE FITTINGS, USE 95/5 SOLDER. REFRIGERANT LINES SHALL BE SIZED AS PER MANUFACTURER RECOMMENDATIONS.
- ARMAFLEX 3/4" INSULATION SHALL BE USED FOR SUCTION LINES, FILTER/DRYER AND SIGHT GLASS SHALL BE PROVIDED AT LIQUID LINES.
- ALL BRANCH TAKE-OFFS TO BE PROVIDED W/MANUAL VOLUME DAMPERS. ALL ELBOWS AND TEE'S MUST BE FURNISHED W/TURNING VANES. PROVIDE 45° BRANCH TAKE-OFF AS PER BRANCH DUCT TAKE-OFF DETAIL.
- PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
- PROVIDE SMOKE DETECTORS WITH ACCESS DOORS IN ALL SUPPLY AIR DUCTS FOR FANS AND AHU'S SERVING A COMMON PLENUM OF 2000 CFM OR ABOVE. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER, COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHUT DOWN ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVING THAT COMMON PLENUM.
- PROVIDE TYPE "B" FIRE DAMPERS IN ALL DUCTS OR OPENINGS PENETRATING FIRE RATED WALLS, MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS, TENANT SEPARATION, PARTITIONS, FLOOR OR ROOF SLABS AND AT O/A INTAKES. PROVIDE RADIATION RADIATION DAMPERS IN RATED CEILING OPENINGS, CEILING FANS, DIFFUSERS OR GRILLES RATED FOR USE IN THE CEILING ASSEMBLY.
- HVAC CONTRACTOR SHALL PROVIDE AN INDEPENDENT TEST AND BALANCE REPORT FOR ALL MECHANICAL EQUIPMENT, AIR DEVICES, DAMPERS, AHU'S AND FANS. THE T & B SHALL BE IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS, AND SHALL INCLUDE AIR QUANTITIES FOR ALL SUPPLY GRILLS, RETURN GRILLS, AND EXHAUST GRILLS, AND THE LEAVING AND ENTERING AIR TEMPERATURE (°S) FROM SUPPLY GRILLS AND EVAPORATORS.
- THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER AND ENGINEERS BEFORE INSTALLATION.
- ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
- MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCH, PLUMBING, ELECTRICAL AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- NO COMBUSTIBLE MATERIALS ARE ALLOWED IN RETURN AIR PLENUMS OR ABOVE CEILING USED AS RETURN AIR PLENUM. IF SPACE WITH RETURN AIR PLENUM HAS ANY DECK TO DECK PARTITIONS, AIR TRANSFER DUCTS MUST BE INSTALLED.
- REFER TO PLUMBING PLANS FOR ALL CONDENSATE PIPING.
- IF PROJECT IS A REMODEL OF AN EXISTING BUILDING, THE CONTRACTOR SHALL VISIT JOB SITE PRIOR TO CONSTRUCTION AND COORDINATE ALL EXISTING FIELD CONDITIONS. ARCHITECT AND/OR ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES.
- CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND A SUSTAINED 120 MPH WIND WITH A GUST FACTOR OF 30%. PROVIDE A LISTED PRE-ENGINEERED ASSEMBLY, OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CERTIFICATION OF ROOF MOUNTING.
- PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING A/C UNIT.
- THROUGHOUT THE COURSE OF THE WORK, MINOR CHANGES AND ADJUSTMENTS TO THE PLANS AND SPECIFICATIONS MAY BE REQUESTED BY THE TENANT, THE CONTRACTOR SHALL MAKE SUCH ADJUSTMENTS WITHOUT ADDITIONAL COST TO THE TENANT, WHERE SUCH ADJUSTMENTS ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE SYSTEMS, AND WITHIN THE INTENT OF THE CONTRACT DOCUMENTS.
- IT IS THE INTENT OF THE PLANS AND SPECIFICATIONS TO FORM A GUIDE FOR A COMPLETE INSTALLATION. EVERYTHING NECESSARY FOR THE COMPLETION AND SUCCESSFUL OPERATION OF THE WORK, WHETHER OR NOT HEREIN DEFINITELY SPECIFIED OR INDICATED ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED AS WELL AS FAITHFULLY AS IF SO SPECIFIED OR INDICATED WITHOUT ADDITIONAL COST TO THE TENANT. THE MECHANICAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LENGTHS PRIOR TO INSTALLATION.
- NOTWITHSTANDING ANY OTHER PROVISIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR BEARS ULTIMATE RESPONSIBILITY FOR COMPLIANCE OF THE INSTALLATION WITH THE REQUIREMENTS OF THE LANDLORD AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
- IF ANY ERRORS, DISCREPANCIES OR OMISSIONS APPEAR IN THE DRAWINGS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF SUCH ERROR OR OMISSION, IN THE EVENT OF THE CONTRACTOR FAILING TO GIVE SUCH NOTICE BEFORE CONSTRUCTION AND/OR FABRICATION OF THE WORK, HE WILL BE HELD RESPONSIBLE FOR THE RESULTS OF ANY SUCH ERRORS, DISCREPANCIES OR OMISSIONS AND THE COST OF RECTIFYING SAME.

### EXHAUST HOOD NOTES

- EXHAUST HOODS SHALL BE CONSTRUCTED OF 18 GAUGE 304 STAINLESS STEEL FOR ALL SURFACES EXPOSED TO THE AIRSTREAM AND 18 GAUGE GALVANIZED STEEL FOR OTHER SURFACES. ALL SEAMS AND JOINTS SHALL HAVE A LIQUID TIGHT U.L. APPROVED CONTINUOUS EXTERNAL WELD.
- ENTIRE SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH NATIONAL SANITATION FOUNDATION STANDARDS, NFPA-96, NFPA-17-A, AND ALL GOVERNING CODES.
- EXHAUST HOODS SHALL BE PROVIDED WITH A ANSUL R-102 AUTOMATIC FIRE EXTINGUISHING SYSTEM FOR PROTECTION OF THE EXHAUST HOOD, PLENUM, GREASE FILTERS, EXHAUST DUCT AND COOKING EQUIPMENT. THE SYSTEM SHALL EMPLOY A LIQUID CHEMICAL EXTINGUISHMENT. THE SYSTEM SHALL BE ARRANGED TO SHUT OFF THE SOURCE OF COOKING HEAT AUTOMATICALLY UPON SYSTEMS OPERATION. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NFPA-96, NFPA-17-A AND ACCORDING TO MANUFACTURERS PRINTED INSTALLATION PROCEDURES. EACH HOOD SHALL HAVE A SEPARATE FIRE EXTINGUISHING SYSTEM WHICH WILL OPERATE EFFECTIVELY WITH OR WITHOUT FANS OPERATING.
- THE INSTALLER OF THE EXHAUST HOOD AUTOMATIC FIRE EXTINGUISHING SYSTEM SHALL BRIEF THE OWNER AND PERSONNEL IN ITS OPERATION.
- EXHAUST AND SUPPLY FANS OF EACH HOOD SHALL BE INTERLOCKED. PROVIDE ONE LIGHT SWITCH AND ONE FAN SWITCH ON THE FACE OF EACH GREASE HOOD.
- GREASE FILTERS TO BE THE GREASE ELIMINATOR SELF-BALANCING TYPE U.L. APPROVED.



**GREASE MASTER**  
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**EXHAUST GWC:  
MODEL GWC-4 WALL HOOD**

EXPOSED MAT'L: 18 GA. TYPE 304 S/S  
UNEXPOSED MAT'L: 18 GA. ALUMINIZED

FINISH: #4 POLISH

LISTED  
UL  
MH11662  
NSF

LIGHTS: (2) INCANDESCENT  
FILTERS: (1) 16 X 20 ALUM BAFFLES  
(2) 16 X 25 ALUM BAFFLES

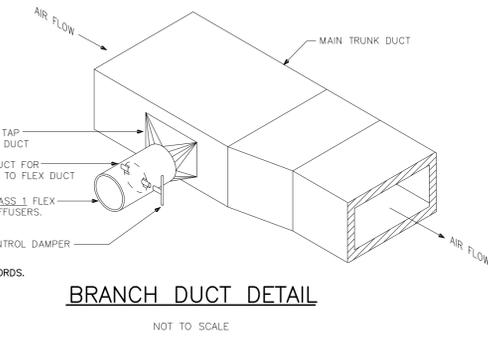
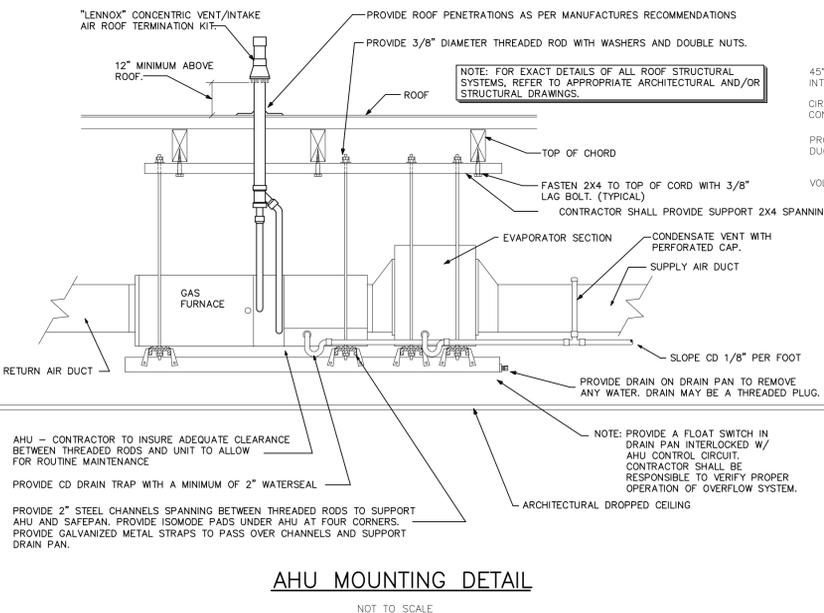
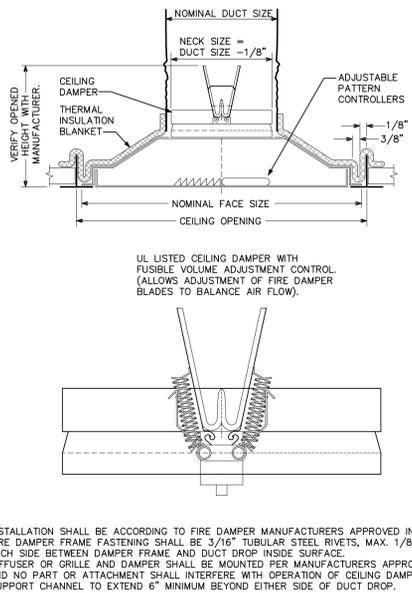
EXHAUST CFM: 2,000 - (EF-3)  
SUPPLY CFM: 1,400 - (SF-1)

CONTROLS: EL-2  
REGISTERS: NONE

**ROOF TOP EXHAUST/SUPPLY FAN PACKAGE:**

EXHAUST FAN MANUFACTURER: JENN FAN (EF-3)  
MODEL: TXB20-1 1 HP  
208 v 1 PHASE

SUPPLY FAN MANUFACTURER: JENN FAN (SF-1)  
MODEL: KSF12-1/2  
MOTOR: 1/2 HP 1049 RPM  
208 v 1 PHASE  
EXHAUST: 2,400 CFM @ 1.00" SP  
SUPPLY: 1,504 CFM @ .500" SP



FAN SCHEDULE										
LABEL	TYPE OF UNIT - AREA SERVED	MANUFACTURER & MODEL NO.	CFM	SP	MOUNTING ARRANGEMENT	MOTOR H.P.	ENCLOSURE TYPE	RPM	VOLTAGE	NOTES
EF-1	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6	90	.125"	CEILING MOUNTED	50 WATTS	OPEN DRIP PROOF	1055	115V/1Ø	1
EF-2	CABINET FAN - REFER TO PLANS	PENN ZEPHYR Z6	300	.125"	CEILING MOUNTED	124 WATTS	OPEN DRIP PROOF	1115	115V/1Ø	1
SF-1	REFER TO EXHAUST HOOD #1 DETAIL AND SPECIFICATIONS ON THIS SHEET									

NOTES: 1.) REFER TO ELECTRICAL PLANS FOR CONTROL.

HORIZONTAL-FLOW GAS FURNACE W/SPLIT SYSTEM AIR CONDITIONING SYSTEM SCHEDULE																				
CONDENSING UNIT								EVAPORATOR COIL UNIT				GAS FURNACE								
CU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CAPACITY	SENSIBLE CAPACITY	COMP. RLA	FAN FLA	VOLTAGE	MOCP	EER/SEER	MANUFACTURER & MODEL NO.	AHU LABEL(S)	MANUFACTURER & MODEL NO.	TOTAL CFM	E.S.P.	BLOWER SPEED	FAN HP	VOLTAGE	INPUT BTUH	OUTPUT BTUH	FLUE SIZE	NOTES
CU #1	LENNOX 10ACB24	24,500	18,375	10.1	1.1	208V/1Ø	20	10.6	LENNOX CH23-31	AHU #1	LENNOX GHR2603-75	900	.30"	LOW	1/3	120V/1Ø	75,000	70,000	2"	1 THRU 4
CU #2	LENNOX H529-036	35,600	29,000	10.3	1.1	208V/3Ø	20	10.0	LENNOX CH23-41	AHU #2	LENNOX GHR2603-75	1,200	.30"	MED.-HIGH	1/3	120V/1Ø	75,000	70,000	2"	1 THRU 4
CU #3	LENNOX H529-060	58,000	39,300	17.3	1.9	208V/3Ø	40	10.0	LENNOX CH23-65	AHU #3	LENNOX GHR2603/5-100	1,750	.30"	MEDIUM	3/4	120V/1Ø	100,000	92,000	2"	1 THRU 4
CU #4	EXISTING 10 TON CU	---	---	---	---	---	---	---	---	AHU #4	EXISTING 10 TON AHU (2) 5 TON UNITS PAIRED	---	---	---	---	---	---	---	---	---

GENERAL NOTES:

- ALL RATINGS ARE AT ARI ENTERING CONDITIONS UNLESS OTHERWISE NOTED.
- PROVIDE VIBRATION ISOLATION FOR UNITS.
- EXTERNAL STATIC PRESSURE DOES NOT INCLUDE COIL OR FILTER PRESSURE DROP.
- CONTRACTOR MAY SUBSTITUTE MANUFACTURER FOR APPROVED EQUAL. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ANY CLEARANCE REQUIREMENTS ARE MET FOR ANY SUBSTITUTIONS.

ABBREVIATION LEGEND:

O/A - OUTSIDE AIR  
HP - HORSE POWER  
RLA - RUNNING LOAD AMPS  
FLA - FULL LOAD AMPS

MOCP - MAX. OVERCURRENT PROTECTION (DUAL ELEMENT TYPE FUSE)  
E.S.P. - EXTERNAL STATIC PRESSURE  
EER - ENERGY EFFICIENCY RATIO  
SEER - SEASONAL ENERGY EFF. RATIO

SPECIFIC NOTES:

- SIZE AND RUN REFRIGERANT PIPING AS PER MANUFACTURERS PUBLISHED RECOMMENDATIONS.
- INSULATE REFRIGERANT SUCTION LINE WITH 2/4" ARMAFLEX OR APPROVED EQUAL.
- PROVIDE 5 YEAR WARRANTY ON COMPRESSOR AND 1YEAR WARRANTY ON ALL PARTS AND LABOR.
- FURNACE SHALL BE PROVIDED WITH CONCENTRIC VENT/INTAKE AIR ROOF TERMINATION KIT.

MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT

Prescriptive [ ] METHOD OF COMPLIANCE: Performance [X] Energy Cost Budget [ ]

Thermal Zone: Zone IV

Exterior Design Conditions

winter dry bulb: 20° F  
summer dry bulb: 97° F

Interior Design Conditions

winter dry bulb: 68° F  
summer dry bulb: 74° F  
relative humidity: 52.9%

Building Heating Load: 393,000 BTU  
Building Cooling Load: 234,100 BTU

Mechanical Spacing Conditioning System

Unitary

Description of unit: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.  
heating efficiency: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.  
cooling efficiency: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.  
heat output of unit: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.  
cooling output of unit: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.

Boiler: N/A  
total boiler output, if oversized, state reason.

Chiller: N/A  
total chiller capacity, if oversized, state reason.

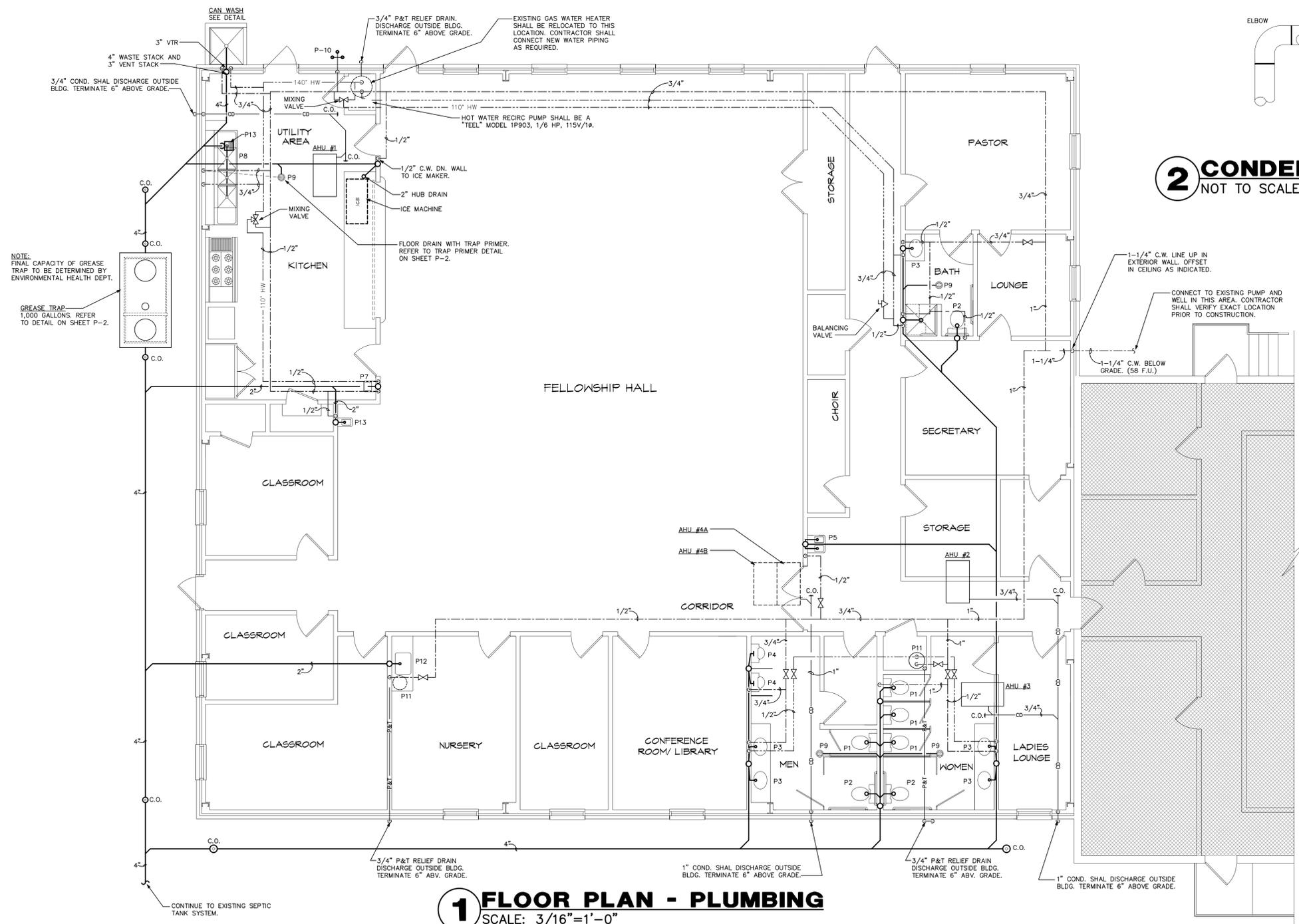
List equipment efficiencies

Equipment schedules with motors (mechanical systems)

motor horsepower: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.  
number of phases: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.  
minimum efficiency: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.  
motor type: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.  
# of poles: REFER TO EQUIPMENT SCHEDULES ON THIS SHEET.

DESIGNER STATEMENT:<sup>1</sup>  
To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina State Building Code, Volume X-Energy.

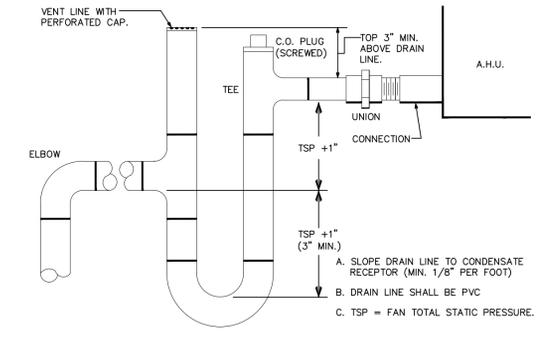
SIGNED: \_\_\_\_\_  
NAME: \_\_\_\_\_  
TITLE: \_\_\_\_\_



NOTE:  
FINAL CAPACITY OF GREASE TRAP TO BE DETERMINED BY ENVIRONMENTAL HEALTH DEPT.

GREASE TRAP, 1,000 GALLONS. REFER TO DETAIL ON SHEET P-2.

**1 FLOOR PLAN - PLUMBING**  
SCALE: 3/16"=1'-0"



**2 CONDENSATE P-TRAP DETAIL**  
NOT TO SCALE

1-1/4" C.W. LINE UP IN EXTERIOR WALL OFFSET IN CEILING AS INDICATED.

CONNECT TO EXISTING PUMP AND WELL IN THIS AREA. CONTRACTOR SHALL VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.

## PLUMBING FIXTURE SCHEDULE

- P-1 (WATER CLOSET)**  
SHALL BE AN AMERICAN STANDARD MODEL NEW CADET MODEL 279B.012 ELONGATED 1.6 GPF, VITREOUS CHINA, SIPHON ACTION BOWL, CLOSE-COUPLED TANK, SPEED CONNECT TANK/BOWL COUPLING SYSTEM TOILET AND AN OLSONITE # 95 OPEN FRONT SEAT LESS COVER.
- P-2 (HANDICAPPED WATER CLOSET)**  
SHALL BE AN AMERICAN STANDARD MODEL CADET ADA MODEL 299B.012 16-1/2" HIGH, 1.6 GPF, VITREOUS CHINA, SIPHON ACTION BOWL, CLOSE-COUPLED TANK, SPEED CONNECT TANK/BOWL COUPLING SYSTEM TOILET AND AN OLSONITE # 95 OPEN FRONT SEAT LESS COVER.
- P-3 (HANDICAPPED COUNTER TOP LAVATORY)**  
SHALL BE AN AMERICAN STANDARD MODEL RONALYN MODEL 0490.011 VITREOUS CHINA SELF-RIMMING FAUCET SHALL BE A MONTERRY 5502.170 W/4" WRIST BLADE HANDLES. PROVIDE 0.5 GPM FLOW RESTRICTOR.
- P-4 (URINAL)**  
SHALL BE AN AMERICAN STANDARD ALLBROOK MODEL 6541.132. FLUSH VALVE SHALL BE SLOAN ROYAL MODEL 180-YB.
- P-5 (HANDICAPPED ELECTRIC WATER COOLER COMBINATION H/L/O)**  
SHALL BE AN OASIS SPLIT LEVEL MODEL PBMSL, 7.8 GPM, 5.0 FLA AT 120 VOLT WITH A 1/5 HP COMPRESSOR.
- P-6 (SHOWER MIXING VALVE)**  
SHALL BE A SPEAKMAN SENTINEL MARK II REGENCY MODEL #SM-1400-AF-SS ANTI-SCALD BALANCED PRESSURE SHOWER VALVE WITH AN INLINE OMNI PRESSURE COMPENSATING 2.5 GPM FLOW RESTRICTOR. (SHOWER STALL BY OWNER)
- P-7 (HAND SINK)**  
BY OWNER.
- P-8 (3 COMP. STAINLESS STEEL SINK)**  
BY OWNER.
- P-9 (FLOOR DRAIN WITH TRAP PRIMER)**  
SHALL BE A JOSAM 30000-4-50 SERIES COATED CAST IRON FLOOR DRAIN. TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, WEJLOC INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET, INSIDE CAULK CONNECTION AND ADJUSTABLE SATIN NIKALOY ROUND SUPER-FLO STRAINER.
- P-10 (HOSE BIBB, NON-FREEZE)**  
SHALL BE A JOSAM SERIES 71050 CAST BRONZE NON-FREEZE WALL HYDRANT WITH A SATIN FINISH NIKALOY FACE, 3/4" H.P.T. OUTLET, INTREGAL VACUUM BREAKER BACKFLOW PREVENTER AND PRESSURE RELIEF VALVE.
- P-11 (JUNIOR WATER HEATER BELOW COUNTER)**  
WATER HEATER SHALL BE A LOCHINVAR MODEL JRC006E, 6 GALLON GLASSINED STORAGE TANK, JUNIOR TYPE WATER HEATER WITH (1) - 1.5 KW ELECTRIC ELEMENT AT 115 VOLTS, SINGLE PHASE INCOMING POWER. 5 YEAR LIMITED WARRANTY ON STORAGE TANK AGAINST TANK FAILURE. WATER HEATER SHALL MEET OR EXCEED ALL APPLICABLE SECTIONS OF ASHRAE STANDARD 90-80A AND NAECA REQUIREMENTS FOR ENERGY CONSERVATION.
- P-12 (SINGLE BOWL STAINLESS STEEL SINK - LARGE)**  
SHALL BE AN ELKAY LUSTERTONE MODEL DLH-2222-10-C SINGLE BOWL STAINLESS STEEL SELF-RIMMING SINK WITH LK2432 HI-ARC FAUCET TO INCLUDE AN OMNI PRESSURE COMPENSATING 2.0 GPM FLOW RESTRICTOR.
- P-13 (FLOOR SINK)**  
FLOOR SINK SHALL BE A "JOSAM" SUPER-FLO SERIES 49340A. PROVIDE 1/2 GRATE.
- P-14 (HANDICAPPED ELECTRIC WATER COOLER)**  
SHALL BE AN OASIS MODEL PLFBWEE, 8.0 GPH, 4.8 FLA AT 120 VOLT WITH A 1/5 HP COMPRESSOR.

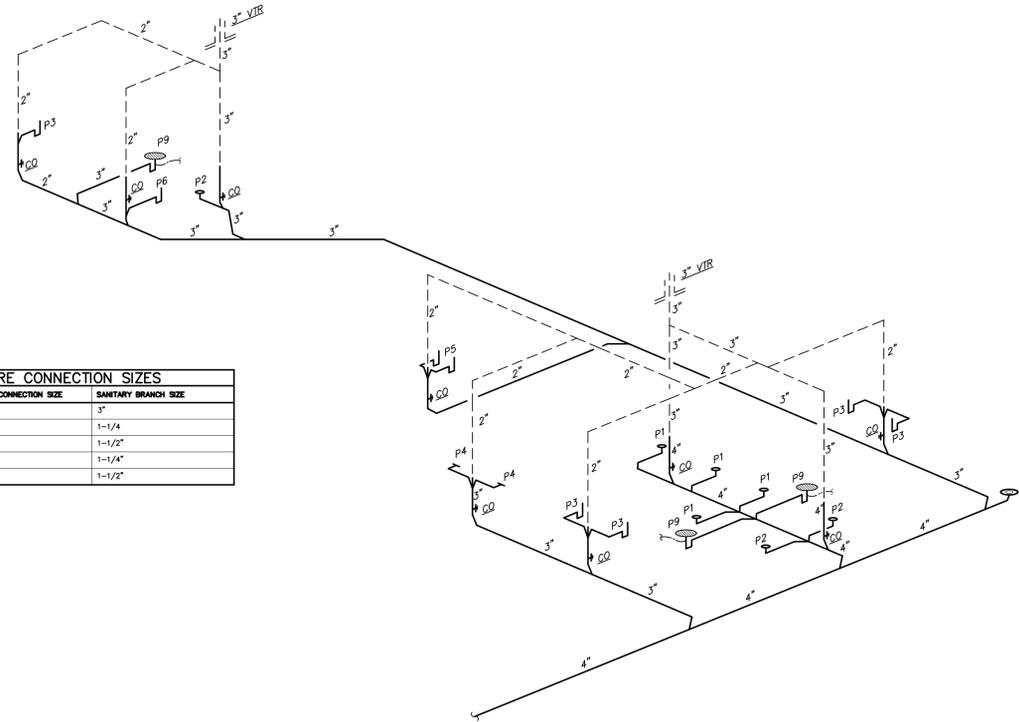
### NOTES:

- 1.) ALL PLUMBING FIXTURES SHALL BE AS SPECIFIED OR APPROVED EQUAL.
- 2.) PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.
- 3.) ALL HANDICAP PLUMBING FIXTURES SHALL BE INSTALLED AS PER LATEST A.D.A. REQUIREMENTS.
- 4.) ALL PLUMBING FIXTURES SHALL COMPLY WITH SFBC TABLE 46-R2.

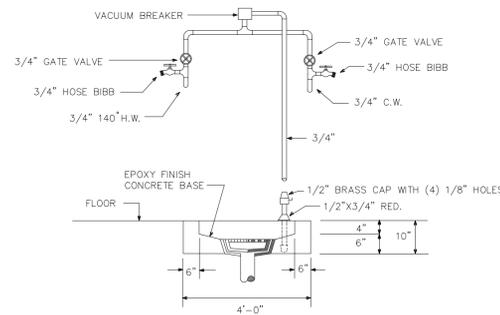
## GENERAL PLUMBING NOTES

1. Drawings are diagrammatic and shall not be scaled. Refer to architectural plans and elevations for exact location of all plumbing fixtures, equipment, etc. Plumbing contractor shall furnish and install all items required for a complete and acceptable working installation.
2. All work and materials shall comply with the latest edition of the National, State, and all local codes and Ordinances having jurisdiction.
3. The plumbing contractor shall visit the site and thoroughly familiarize himself with all existing conditions. All execution and backfill as required for this phase of construction shall be a part of this contract.
4. All material shall be new.
5. All work shall be performed by a licensed plumbing contractor in a first class workmanlike manner. The completed system shall be fully operative and accepted by engineer/architect.
6. All required insurance shall be provided for protection against public liability or property damage for the duration of the work.
7. The plumbing contractor shall secure and pay all permit fees, inspections, and tests.
8. All work shall be coordinated with other trades to avoid interference with the progress of construction.
9. The plumbing contractor shall guarantee all materials and workmanship free from defects for a period of not less than (1) one year from date of acceptance. Correction of any defects shall be completed without additional charge and shall include replacement or repair of any other phase of the installation which may have been damaged thereby.
10. Verify location, size and inverts of all existing utilities prior to start of construction. Advise architect/engineer of any discrepancies.
11. All fixtures shall be provided with readily accessible stops.
12. Water piping shall be type "L" copper for up to and including 2" and shall be type "K" for 2 1/2" and larger.
13. Soil, wastes and vent piping shall be PVC #40. Waste and vent piping above slab shall be PVC, if approved by local authorities having jurisdiction, otherwise cast iron. PVC shall not be installed in A/C return air plenum or penetrate fire rated walls or floors.
14. Air conditioning condensate drain piping shall be PVC #40 or copper drain waste and bent pipe and fittings. Insulate all condensate piping except exterior piping. Install all condensate piping for air conditioning units as required per local codes.
15. Furnish and install approved air chambers at each plumbing fixture and PDI approved shock arresters on main lines and risers.
16. Provide chrome plated combination covered plate and cleantout plug for all wall cleanouts, Josam 58890.
17. Insulate lines as follows:
  - a) Hot water supply and return: 1" thick fiberglass.
  - b) Condensate piping: 1/2" thick armafex preformed.

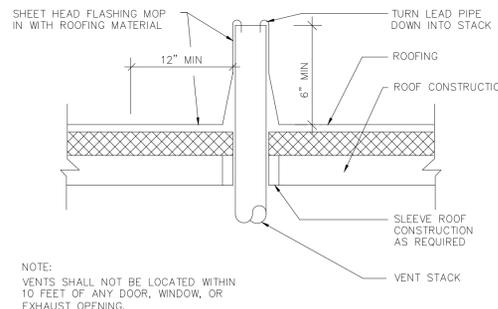
FIXTURE	C.W. CONN. SIZE	H.W. CONNECTION SIZE	SANITARY BRANCH SIZE
P-1-1&2	1/2"	-	3"
P-3	1/2"	1/2"	1-1/4"
P-4	3/4"	-	1-1/2"
P-5	1/2"	-	1-1/4"
P-6	1/2"	1/2"	1-1/2"



## 1 SANITARY ISOMETRIC NO SCALE

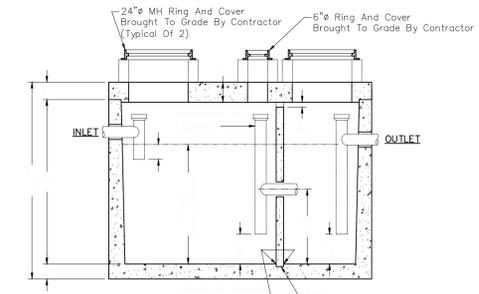
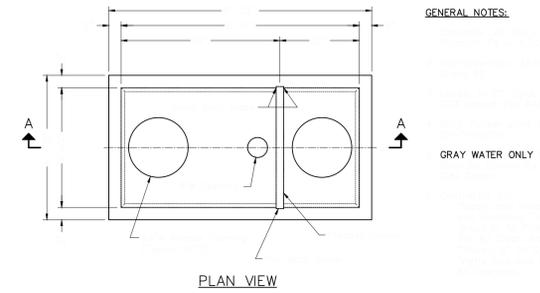


## 3 CAN WASH DETAIL NO SCALE

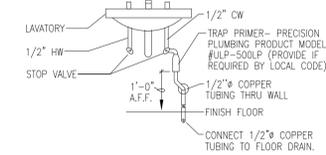


## 4 VENT THRU ROOF DETAIL NO SCALE

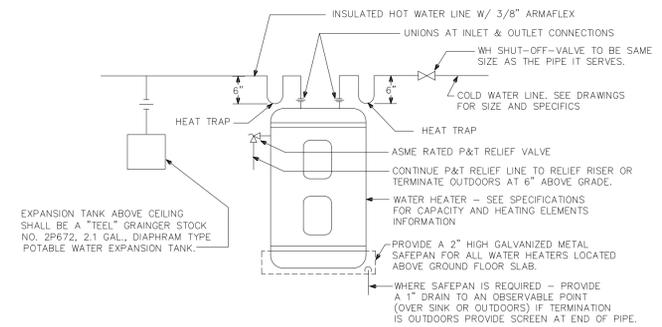
48-1000-GA  
GREASE INTERCEPTER  
1,000 GALLON CAPACITY  
www.oldcastle-precast.com



## 2 GREASE TRAP DETAIL NO SCALE



## 2 TRAP PRIMER DETAIL NO SCALE



## 2 SANITARY ISOMETRIC NO SCALE

LIGHTING FIXTURE SCHEDULE							
LABEL	TYPE OF FIXTURE	FINISH	LENS TYPE	VOLTAGE	LAMP	MANUFACTURER & MODEL NO.	REMARKS
A	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(4) 32W T8	LITHONIA 2SPG-432-FWA12-120	PROVIDE LAMP SHIELDS IN KITCHEN AREA.
B	RECESSED 2'X4' TROFFER	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA 2SPG-232-FWA12-120	
C	4' FLUORESCENT STRIP	WHITE		120	(2) 32WT8	LITHONIA C232-120	
D	FLUORESCENT WALL LIGHT	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA WC-232-A12-120	
D1	FLUORESCENT WALL LIGHT	WHITE	PRISMATIC	120	(2) 17W T8	LITHONIA WC-217-A12-120	
EM	EMERGENCY EGRESS	WHITE		120	INCLUDED	LITHONIA ELM2	
EX	EXIT SIGN	WHITE	RED	120	INCLUDED	LITHONIA F2E-SW2R-120	
F	RECESSED INCANDESCENT	WHITE	DROP OPAL	120	(1) 75W A19	LITHONIA LG-7RW-DOL-120	WET LOCATION LISTED
G	EXT. FLUORESCENT WALL MTD	BRONZE	POLYCARBONATE	120	(1) 28WDTT	LITHONIA TWL-28DTT-120	
H	SURFACE MOUNTED FLUORESCENT	WHITE	PRISMATIC	120	(2) 32W T8	LITHONIA 2LB-232-120	

ELECTRICAL SYSTEM AND EQUIPMENT	
METHOD OF COMPLIANCE	
PREScriptive	<input type="checkbox"/>
PERFORMANCE	<input checked="" type="checkbox"/>
ENERGY COST BUDGET	<input type="checkbox"/>

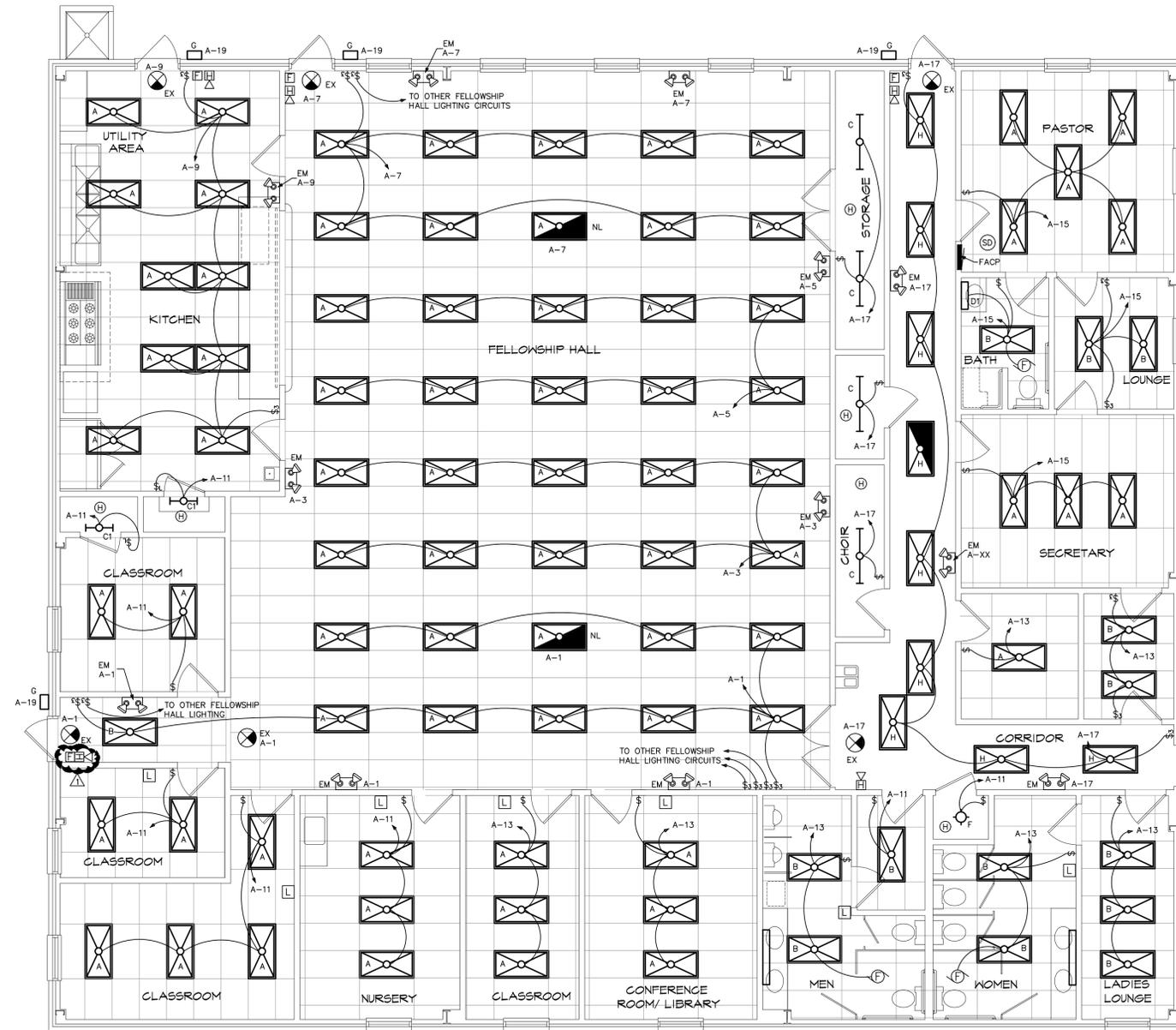
PROVIDE A STANDARD RISER DIAGRAM WHICH INDICATES DESIGNATED POINTS FOR CHECK METERING. PROVIDE A STANDARD PANEL SCHEDULE DESCRIPTION WHICH IDENTIFIES DIFFERENT ENDUSE LOADS.

LIGHTING SCHEDULE  
 LAMP TYPE REQUIRED IN FIXTURE \_\_\_\_\_ SEE SCHEDULE ON DRAWINGS  
 NUMBER OF LAMPS IN FIXTURE \_\_\_\_\_ SEE SCHEDULE ON DRAWINGS  
 BALLAST TYPE USED IN FIXTURE \_\_\_\_\_ SEE SCHEDULE ON DRAWINGS  
 NUMBER OF BALLASTS IN FIXTURE \_\_\_\_\_ SEE SCHEDULE ON DRAWINGS  
 TOTAL WATTAGE PER FIXTURE \_\_\_\_\_ SEE SCHEDULE ON DRAWINGS  
 TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED \_\_\_\_\_ 2.20 VS 2.50  
 TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED \_\_\_\_\_ N/A

EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)  
 MOTOR HORSEPOWER \_\_\_\_\_ N/A  
 NUMBER OF PHASES \_\_\_\_\_ N/A  
 MINIMUM EFFICIENCY \_\_\_\_\_ N/A  
 MOTOR TYPE \_\_\_\_\_ N/A  
 NUMBER OF POLES \_\_\_\_\_ N/A

DESIGNER STATEMENT:  
 TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE, VOLUME X-ENERGY.

SIGNED: \_\_\_\_\_  
 NAME: \_\_\_\_\_  
 TITLE: \_\_\_\_\_

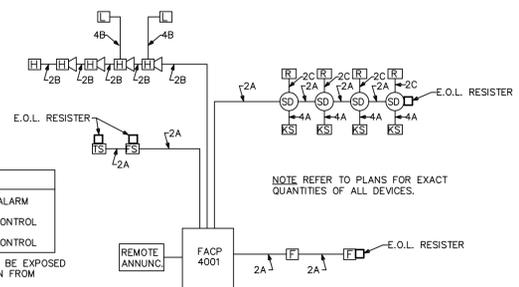


**1 FLOOR PLAN - LIGHTING**  
 SCALE: 3/16"=1'-0"

LEGEND	
FACP 4001	4001-9403 HONEYWELL POWER LIMITED CONTROL PANEL
□	2099-9695 PULL STATION
□	4901-9705 HORN
□	4904-9501 STROBE ONLY
⊙	2098-9649 DUCT DETECTOR
⊙	MR801/T RELAY
⊙	2908-9806 KEY SWITCH
⊙	⊙ FLOW SWITCH (FURNISHED BY F.S. CONTRACTOR)
⊙	⊙ TAMPER SWITCH (FURNISHED BY F.S. CONTRACTOR)

WIRE LEGEND	
A	= 18 AWG. SOLID ALARM
B	= 14 AWG. SOLID CONTROL
C	= 18 AWG. SOLID CONTROL

NOTE: ALL WIRING TO BE EXPOSED EXCEPT VERTICAL RUN FROM CEILING TO DEVICE.

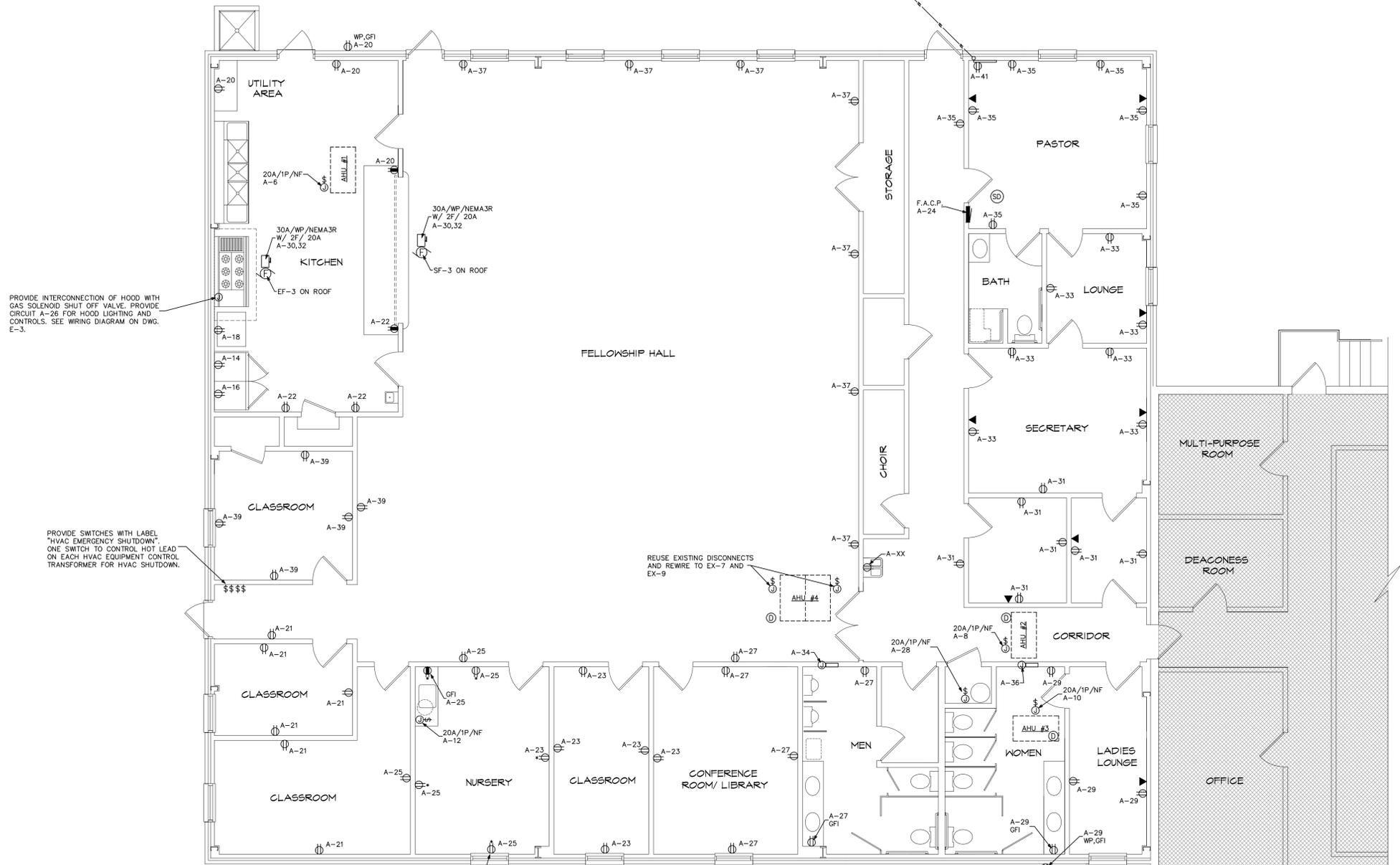


**FIRE ALARM SYSTEM NOTE**  
 THE FIRE ALARM SYSTEM IS TO PROTECT BOTH THE NEW EXPANSION AREA AND THE EXISTING SANCTUARY. IN THE SANCTUARY AREA, PROVIDE A NEW DUCT SMOKE DETECTOR IN THE RETURN AIR DUCT OF THE EXISTING HVAC UNIT AND A HORN/STROBE AND PULLSTATION AT EACH OF THE THREE DOORS. LOCATE THE REMOTE ANNIUNCIATOR AT THE MAIN DOOR ENTRY AREA. COORDINATE EXACT LOCATION OF ALL FIRE ALARM DEVICES WITH THE LOCAL FIRE AUTHORITY PRIOR TO ANY ROUGH IN WORK.

## 2 FIRE ALARM RISER DIAGRAM

NO SCALE

2" E.C. TO LOCAL TELEPHONE SERVICE. COORDINATE REQUIREMENTS WITH LOCAL UTILITY COMPANY REPRESENTATIVE.



PROVIDE INTERCONNECTION OF HOOD WITH GAS SOLENOID SHUT OFF VALVE. PROVIDE CIRCUIT A-26 FOR HOOD LIGHTING AND CONTROLS. SEE WIRING DIAGRAM ON DWG. E-3.

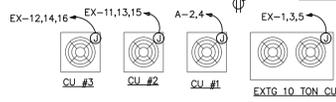
PROVIDE SWITCHES WITH LABEL "HVAC EMERGENCY SHUTDOWN" ONE SWITCH TO CONTROL HOT LEAD ON EACH HVAC EQUIPMENT CONTROL TRANSFORMER FOR HVAC SHUTDOWN.

REUSE EXISTING DISCONNECTS AND REWIRE TO EX-7 AND EX-9

NOTE ALL RECEPTACLES INDICATED WITH AN "\*" ARE TO BE TAMPER PROOF RECEPTACLES EQUAL TO A "LEWITON" MODEL S262

## 1 FLOOR PLAN - POWER

SCALE: 3/16"=1'-0"



NEW 225A PANELBOARD "A" WITH 225A/3P MCB AS SERVICE DISCONNECT

EXISTING 200A PANEL "EX" WITH 200A/3P MCB (EXTG.). PANEL TO REMAIN "AS-IS"

NEW 400A/3P METER TO FEED EXTG. PANEL "EX" AND NEW PANEL "AC". SEE RISER DIAGRAM

E2

**ELECTRICAL NOTES:**

- GENERAL: ALL WORK SHALL CONFORM TO THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL JURISDICTIONAL CODES.  
THE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND ANY APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, THE CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM, AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL THE OWNER HAS DIRECTED THE CORRECTIVE ACTION TO BE TAKEN.  
THE CONTRACTOR SHALL COORDINATE THE PROPOSED LOCATIONS OF ALL ELECTRICAL MATERIALS AND EQUIPMENT WITH THE REPRESENTATIVES OF THE OTHER TRADES INVOLVED BEFORE STARTING INSTALLATION OF THOSE ITEMS.  
COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES, CONDUIT, AND SLEEVES TO BE SET IN CAST-IN-PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED.
- SCOPE: EXCEPT WHERE OTHERWISE SPECIFICALLY INDICATED ON THE DRAWINGS BY "FUTURE", "BY OTHERS", OR BY A SIMILAR NOTATION, IT IS THE INTENT THAT THE CONTRACTOR FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO PROVIDE ALL SYSTEMS IN COMPLETE AND OPERATING CONDITION.
- EXCAVATE AS NECESSARY FOR THE INSTALLATION OF ELECTRICAL MATERIALS AND EQUIPMENT. VERIFY THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES OR STRUCTURES BEFORE EXCAVATING AND EXERCISE CARE TO AVOID DAMAGE TO SUCH ITEMS DURING EXCAVATION. BACKFILL WITH EARTH FREE OF LARGE CLODS, LARGE STONES AND FOREIGN DEBRIS, DEPOSITED IN 6" LAYERS AND COMPACTED TO A DENSITY OF NOT LESS THAN THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- MATERIALS: THE MATERIALS AND EQUIPMENT FURNISHED SHALL BE AS INDICATED ON THE DRAWINGS; SUBSTITUTIONS SHALL NOT BE MADE EXCEPT WHERE EXPRESSLY APPROVED BY THE OWNER OR HIS REPRESENTATIVE PRIOR TO STARTING INSTALLATION OF THE ITEMS. THE ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED SHALL BE LISTED OR LABELED BY UNDERWRITERS LABORATORIES OR OTHER RECOGNIZED TESTING ORGANIZATION, AND SHALL BE ACCEPTABLE TO THE LOCAL BUILDING AUTHORITY.
- GROUNDING: GROUNDING SHALL BE IN ACCORDANCE WITH ARTICLE 250, NEC. PROVIDE GROUND WIRES IN ALL CONDUITS UNLESS OTHERWISE NOTED.
- CONDUITS: ELECTRICAL METALLIC TUBING (EMT) SHALL BE INSTALLED ONLY IN DRY LOCATIONS, IN CONCRETE ABOVE GRADE, AND WHERE NOT SUBJECT TO PHYSICAL DAMAGE.  
CONDUITS INSTALLED UNDERGROUND SHALL BE POLYVINYLCHLORIDE (PVC) AND SHALL NOT BE SMALLER THAN 3/4" TRADE SIZE. WHERE PVC CONDUIT IS INSTALLED UNDERGROUND, ELBOWS TURNING UP AND CONDUIT EMERGING ABOVE GRADE SHALL BE RSC. THE TOPS OF CONDUITS SHALL NOT BE LESS THAN 24" BELOW FINISHED GRADE. PVC CONDUIT INSTALLED ABOVE GRADE OR DIRECT-BURIED IN EARTH SHALL BE NEMA TC2 TYPE EPC-40-PVC (SCHEDULE 40) EXCEPT THAT WHERE UNDER AREAS SUBJECT TO HEAVY VEHICULAR TRAFFIC, IT SHALL BE NEMA TC2 TYPE EPC-80-PVC (SCHEDULE 80).  
CONDUCTORS: CONDUCTORS SHALL BE THWN COPPER. POWER, LIGHTING AND GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG. EXCEPT WHERE OTHERWISE INDICATED, CONTROL CONDUCTORS SHALL NOT BE SMALLER THAN #14 AWG. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET WITHOUT SPLICES EXCEPT WITHIN WIREWAY OR JUNCTION BOXES. MARK CONDUCTORS IN PANELS, PULL BOXES OR WIREWAYS AND TERMINAL STRIP TERMINALS FOR IDENTIFICATION OF CIRCUITS.  
CONDUCTORS SHALL BE JOINED USING COMPRESSION SPLICES, EXCEPT THAT CONDUCTORS #10 AND SMALLER MAY BE JOINED USING WIRE NUT TYPE CONNECTORS. CONDUCTORS SHALL BE TERMINATED USING COMPRESSION OR PRESSURE TYPE TERMINAL LUGS, OR IN PRESSURE TERMINALS. COMPRESSION SPLICES USED ON CONDUCTORS #10 AWG AND SMALLER, SHALL BE THE SELF-INSULATED TYPE; OTHER SPLICES SHALL BE INSULATED USING 3M #35+ OR #88 PLASTIC TAPE. SPLICES IN WET LOCATIONS SHALL BE INSULATED WITH ELECTRICAL TAPE AND ENCAPSULATED WITH SCOTCHCAST OR EQUAL POTTING COMPOUND.
- PROVIDE AND INSTALL JUNCTION AND PULL BOXES WHERE INDICATED AND WHERE NECESSARY TO TERMINATE, TAP OFF, OR REDIRECT MULTIPLE CONDUIT RUNS, OF SIZE INDICATED OR AS REQUIRED BY NEC. WHERE FEEDER SPLICES ARE TO BE MADE, INSTALL BOXES LARGE ENOUGH TO PROVIDE AMPLE WORK SPACE.
- LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE AS INDICATED ON THE DRAWINGS, AND SHALL BE INSTALLED COMPLETE WITH LAMPS.  
FIXTURES WITH ADJUSTMENTS AFFECTING LIGHT DISTRIBUTION SHALL BE SET TO PROVIDE THE REQUIRED LIGHT PATTERNS PRIOR TO THE FINAL DEMONSTRATION TEST.
- TESTS: AFTER EACH SYSTEM HAS BEEN COMPLETED, A FUNCTIONAL TEST SHALL BE PERFORMED TO DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE.

CIRCUIT BREAKER PANEL SCHEDULE EX (EXISTING SERVICE PANELBOARD)																
225 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, 200A. M.C.B., 10000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 3R ENCLOSURE																
#	BKR.	WIRE AND CONDUIT			LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT			BKR. #		
		COND.	NEUTRAL	GND							KEYS	C.	GND		NEUTRAL	COND.
1						0	5119							2		
3	80/3	#4		#8	1	0	5119			EXTG CONDENSING UNIT	CHDM	1	#8	#4	80/3	4
5						0	5119			EXTG CONDENSING UNIT	CHDM	1	#8	#4	80/3	4
7	20/1	#12	#12	#12	1/2	1123	1123			EXTG. FURNACE	CHAL	1/2	#12	#12	20/1	6
9	20/1	#12	#12	#12	1/2	1123	1123			EXTG. FURNACE	CHAL	1/2	#12	#12	20/1	10
11						0	1368									
13	20/3	#12		#12	1/2	0	2304			NEW CONDENSING UNIT #2	CHDL	3/4	#10	#8	40/3	14
15						0	1368									
						0	2304			NEW CONDENSING UNIT #3	CHDL	3/4	#10	#8	40/3	14
						0	1368									
						0	2304									
WIRE/CONDUIT KEY						16156	16156	13910	PEAK PHASE (A) UNBALANCED NEUTRAL LOAD AMPS = 18.7 AMPS							
1234									NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 128.4 AMPS							
TEMP RATING									PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4001							
L-TEMP RATING									REGISTERED TO - TODD W. CAREY AND ASSOCIATES OF THE CAROLINAS, PA							
CONDUIT TYPE																
INSULATION																
WIRING TYPE																

PANEL EX (EXIS) DIVERSIFICATION CALCULATIONS	
HVAC LOAD AT 100%	- 46224
PLUS 25% OF THE LARGEST MOTOR	- 3528
TOTAL DIVERSIFIED PANEL LOAD	- 49752
LOAD AT 120/208V/3-PHASE/4-WIRE	- 138.2A

A.I.C. NOTE  
ACCORDING TO THE LOCAL UTILITY, THE EXPECTED INTERRUPTING CAPACITY OF THE POLE MOUNTED TRANSFORMERS IS LESS THAN 10,000 AMPERES.

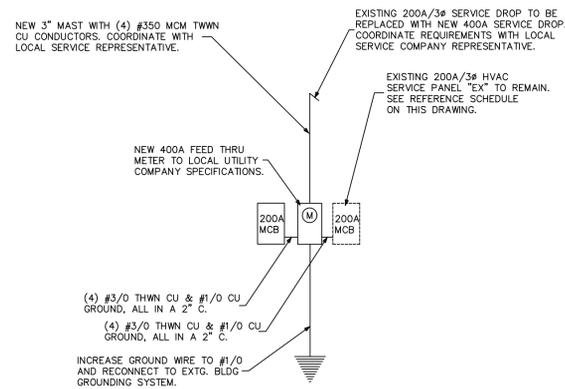
CIRCUIT BREAKER PANEL SCHEDULE A															
225 AMP, 120/208 VOLT, THREE PHASE, FOUR WIRE, 200A. M.C.B., 22000 AMPS MINIMUM A.I.C. BRACING, SURFACE MOUNTED, TYPE NEMA 3R ENCLOSURE															
#	BKR.	WIRE AND CONDUIT			LOAD DESCRIPTION	NEUT.	LINE A	LINE B	LINE C	LOAD DESCRIPTION	WIRE AND CONDUIT			BKR. #	
		COND.	NEUTRAL	GND							KEYS	C.	GND		NEUTRAL
1	20/1	#12	#12	#12	1/2	1540	1540			FELLOWSHIP HALL LIGHTING				2	
3	20/1	#12	Shared	Sh	S 1	1400	1400			FELLOWSHIP HALL LIGHTING	CHAL	1/2	#12	20/2	
5	20/1	#12	Shared	Sh	S 1	1400	1400			FELLOWSHIP HALL LIGHTING	CHAL	1/2	#12	20/1	
7	20/1	#12	#12	#12	1/2	832	832			FELLOWSHIP HALL LIGHTING	CHAM	1/2	#12	20/1	
9	20/1	#12	Shared	Sh	S 7	1400	1400			KITCHEN AREA LIGHTING	CHAM	1/2	#12	20/1	
11	20/1	#12	Shared	Sh	S 7	1581	1581			CHAL LIGHTING	CHAM	1/2	#12	20/1	
13	20/1	#12	#12	#12	1/2	1500	1500			CHAL LIGHTING	CHAL	1/2	#12	20/1	
15	20/1	#12	Shared	Sh	S13	1260	1260			CHAL LIGHTING	CHAL	1/2	#12	20/1	
17	20/1	#12	Shared	Sh	S13	1400	1400			CHAL LIGHTING	CHAL	1/2	#12	20/1	
19	15/1	#14	#14	#14	1/2	1080	1080			EXT. SECURITY LIGHTING *	CHAL	1/2	#12	20/1	
21	15/1	#14	Shared	Sh	S12	250	250			RECEPTACLES	CHAL	1/2	#12	20/1	
23	15/1	#14	#14	#14	1/2	900	900			RECEPTACLES	CHAL	1/2	#12	20/1	
25	15/1	#14	Shared	Sh	S12	200	200			RECEPTACLES	CHAL	1/2	#14	15/1	
27	15/1	#14	#14	#14	1/2	1080	1080			RECEPTACLES	CHAL	1/2	#14	15/1	
29	15/1	#14	#14	#14	1/2	1500	1500			RECEPTACLES	CHAL	1/2	#12	20/1	
31	15/1	#14	#14	#14	1/2	0	1477			RECEPTACLES	CHAM	1/2	#12	20/2	
33	15/1	#14	#14	#14	1/2	1260	1260			RECEPTACLES	CHAL	1/2	#12	20/1	
35	15/1	#14	#14	#14	1/2	1260	1260			RECEPTACLES	CHAL	1/2	#12	20/1	
37	15/1	#14	#14	#14	1/2	1900	1900			RECEPTACLES	CHAL	1/2	#12	20/1	
39	15/1	#14	#14	#14	1/2	1260	1260			RECEPTACLES				36	
41	15/1	#14	#14	#14	1/2	900	900			RECEPTACLES				40	
						360	360			TELEPHONE BOARD				42	
WIRE/CONDUIT KEY						13674	15946	15149	PEAK PHASE (B) UNBALANCED NEUTRAL LOAD AMPS = 123.2 AMPS						
1234									NON DIVERSIFIED LOAD AT 208 VOLT, THREE PHASE = 124.4 AMPS						
TEMP RATING									PRINTED ON PANELS PROGRAM SERIAL NUMBER 2001.4001						
L-TEMP RATING									REGISTERED TO - TODD W. CAREY AND ASSOCIATES OF THE CAROLINAS, PA						
CONDUIT TYPE															
INSULATION															
WIRING TYPE															

\* - PROVIDE TIMELOCK CONTROL FOR THIS CIRCUIT

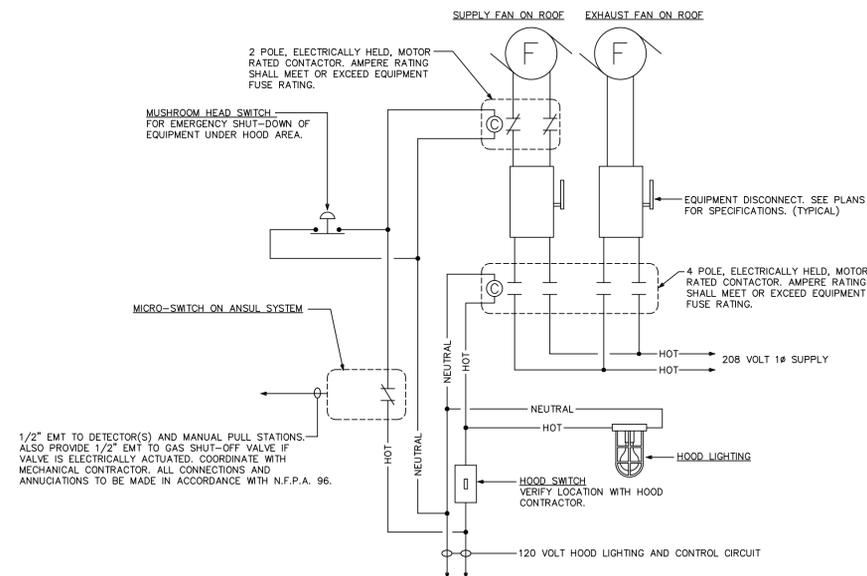
NOTE:  
ALL CONDUITS INDICATED WITH AN 'S\*\*' ARE TO BE SHARED WITH ANOTHER CIRCUIT. THE NUMBERS IN THE 'S\*\*' ARE THE 'TARGET' OF THE SHARE. ALL CONDUIT SIZES INDICATED AS 'SHARED' ARE SHARED WITHIN THE GROUP. THE PROGRAM WILL SHARE ONLY ONE PHASE LOAD WITH EACH NEUTRAL. ALL TREATING REQUIRED BY 310-15(b)(2) HAS BEEN APPLIED TO ALL LOAD CONDUCTORS, AND THE TARGET SHARE CONDUIT HAS BEEN SIZED FOR ALL CONDUCTORS.

PANEL A DIVERSIFICATION CALCULATIONS	
RECEPTACLES (71)	- 12780 VA TOTAL
FIRST 10 KVA AT 100%	- 10000
REMAINER AT 50%	- 1390
LIGHTING	- 16838
HVAC LOAD AT 100%	- 12375
MOTOR LOADS AT 100%	- 3224
PLUS 25% OF THE LARGEST MOTOR	- 525
MISC NON-CONTINUOUS LOADS AT 100%	- 400
KITCHEN EQUIPMENT (3)	- 2268
TOTAL DIVERSIFIED PANEL LOAD	- 47020
LOAD AT 120/208V/3-PHASE/4-WIRE	- 130.6A

NEW SERVICE DIVERSIFICATION CALCULATIONS	
RECEPTACLES (71)	- 12780 VA TOTAL
FIRST 10 KVA AT 100%	- 10000
REMAINER AT 50%	- 1390
LIGHTING	- 16838
HVAC LOAD AT 100%	- 58599
MOTOR LOADS AT 100%	- 3224
PLUS 25% OF THE LARGEST MOTOR	- 3528
MISC NON-CONTINUOUS LOADS AT 100%	- 400
KITCHEN EQUIPMENT (3)	- 2268
TOTAL DIVERSIFIED PANEL LOAD	- 96247
LOAD AT 120/208V/3-PHASE/4-WIRE	- 267.4A



**1 ELECTRICAL RISER DIAGRAM**  
NO SCALE



**2 HOOD CONTROL WIRING DETAIL**  
NO SCALE